

Claims

What is claimed is:

1. A strainer assembly comprising:

5 a strainer body defining an internal chamber and having a primary opening formed therein, said strainer body comprising a wall encompassing at least a portion of said internal chamber, said wall including a series of flow control apertures formed therein, wherein said series of flow control apertures comprises at least a first flow control aperture proximate to said primary opening and a second flow control aperture distal to said primary opening, wherein said
10 second flow control aperture has an area greater than the area of said first flow control aperture, and wherein said first flow control aperture and said second flow control aperture are covered by screen.

2. The strainer assembly of claim 1, wherein said wall comprises a flow control plate having
15 at least one of said first flow control aperture and said second flow control aperture formed therein.

3. The strainer assembly of claim 2, wherein each flow control aperture in said series of apertures has an area greater than the area of each flow control aperture in said series that is
20 proximal to said primary opening.

4. The strainer assembly of claim 3, wherein said primary opening is centrally aligned in said flow control plate and said series of flow control apertures is radially aligned with said primary opening.

5 5. The strainer assembly of claim 2, wherein said flow control plate further comprises a standoff formed thereon separating said screen from said flow control apertures.

6. The strainer assembly of claim 1, wherein said wall comprises a first flow control plate and a second flow control plate.

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7. The strainer assembly of claim 6, wherein each of said first flow control plate and said second flow control plate comprises a plurality of flow control apertures formed therein.

8. The strainer assembly of claim 7, wherein said primary opening is formed in said first
15 flow control plate.

9. The strainer assembly of claim 8, wherein said second flow control plate comprises a secondary opening formed therein.

20 10. The strainer assembly of claim 9, wherein said primary opening and said secondary opening are axially coaligned.

11. The strainer assembly of claim 9, wherein said plurality of flow control apertures of said first flow control plate are radially aligned around said primary opening and said plurality of flow control apertures of said second flow control plate are radially aligned around said secondary opening.

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12. The strainer assembly of claim 6, wherein said first flow control plate and said second flow control plate are supported by a tension rod.

13. The strainer assembly of claim 6, wherein said wall further comprises a rim disposed
10 between said first and second flow control plates.

14. The strainer assembly of claim 13, wherein said rim includes apertures formed therein.

15. The strainer assembly of claim 6, wherein said screen comprises a first screen plate
15 aligned with said first flow control plate and a second screen plate aligned with said second flow control plate.

16. A strainer assembly comprising:
a body having a primary opening and a secondary opening formed therein and
20 comprising:

a first flow control plate having said primary opening and a first plurality of flow control apertures formed therein, wherein the collective area of said first plurality flow control apertures increases distally from said primary opening; and,

a second flow control plate connected to said first flow control plate and having a secondary opening and a second plurality of flow control apertures formed therein, wherein the collective area of said second plurality of flow control apertures increases distally from said secondary opening.

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17. The strainer assembly of claim 16, further comprising screen extending across said first plurality of flow control apertures and said second plurality of flow control apertures.

18. The strainer assembly of claim 17, wherein said screen comprises a first screen plate
10 aligned with said first flow control plate and a second screen plate aligned with said second flow control plate.

19. The strainer assembly of claim 16, wherein said first flow control plate and said second flow control plate are supported by a tension rod.

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20. A suction strainer for connection to a suction inlet of a pump comprising:

a plurality of strainers in flow communication with said suction inlet of said pump,
wherein at least one strainer of said plurality of strainers comprises:

a first strainer body defining a first internal chamber and having a first primary opening
20 formed therein, said first strainer body comprising a wall encompassing at least a portion of said first internal chamber, said wall including a first plurality of flow control apertures formed therein, wherein the collective area of said first plurality of flow control apertures increases distally from said first primary opening.

21. The suction strainer of claim 20, wherein said plurality of strainers are sequentially aligned along a flow line to said suction inlet.

22. The suction strainer of claim 21, wherein said internal chamber of said first strainer body
5 forms a portion of said flow line.

23. The suction strainer of claim 21, wherein each of said plurality of strainers comprises flow control apertures formed therein and wherein the aggregate area of said flow control apertures of each of said plurality of strainers increases distally from said suction inlet.

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24. The suction strainer of claim 20, wherein said first strainer body comprises a first secondary opening formed therein, wherein said first secondary opening is upstream of said first primary opening.

15 25. The suction strainer of claim 24, wherein said plurality of strainers comprises a second strainer comprising a second strainer body defining a second internal chamber and a second primary opening, wherein said second primary opening is upstream of said first secondary opening.

20 26. The suction strainer of claim 25, wherein said second strainer comprises a second plurality of flow control apertures formed therein and wherein the collective area of said second plurality of flow control apertures increases distally from said second primary opening.

27. The suction strainer of claim 20, wherein said strainer body comprises a first flow control plate and a second flow control plate.

28. The suction strainer of claim 27, wherein said first primary opening is formed in said first flow control plate and a second primary opening is formed in said second flow control plate.

29. The suction strainer of claim 28, wherein said first flow control plate includes a plurality of flow control apertures radially aligned with said first primary opening, wherein the area of said flow control apertures increases distally from said primary opening.

30. The suction strainer of claim 20, wherein said first strainer body comprises screen extending across said flow control apertures.

31. A strainer assembly for connection to a suction inlet of a pump, said strainer assembly comprising:

a plurality of sequentially aligned strainers in flow communication with said suction inlet, wherein each strainer of said plurality of sequentially aligned strainers comprises:

a strainer body defining a internal chamber and comprising a first flow control plate and a second flow control plate, said first flow control plate having a primary opening and a first plurality of flow control apertures, wherein the collective area of said first plurality of flow control apertures increases distally from said primary opening, wherein said second flow control plate has a second plurality of flow control apertures formed therein and a secondary opening,

and wherein the collective area of said second plurality of flow control apertures increases distally from said secondary opening.

32. The strainer assembly of claim 31, wherein screen extends across said first and second
5 pluralities of flow control apertures of each strainer.

33. The strainer assembly of claim 31, wherein the aggregate area of flow control apertures in each strainer increases distally from said suction inlet.

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